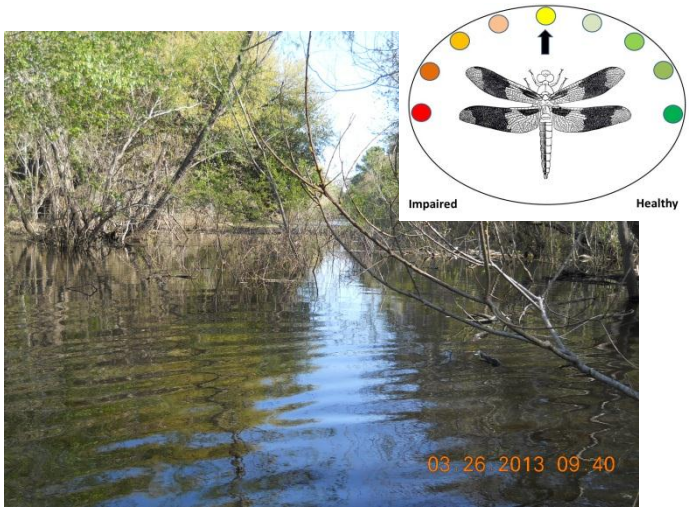
Waterbody: Alford Arm Creek



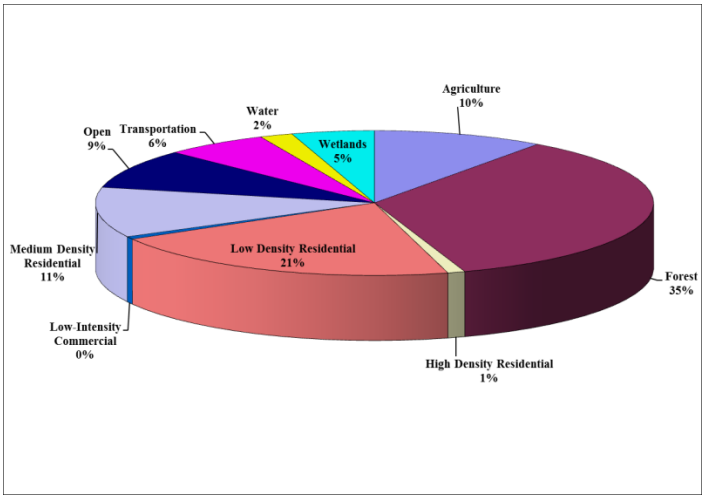
Basin: Lake Lafayette

The Alford Arm tributary is a moderately altered, nitrogen-limited stream located in the northern part of Leon County. The tributary flows from Lake McBride in the Bradfordville area and receives runoff from the heavily developed Killearn Estates and Killearn Acres neighborhoods. Many of the waterbodies are former agricultural ponds, most notably the Velda Dairy impoundments, that are now seen as residential amenities. The zoning designation south of Centerville Road and US 90 remains agricultural.

As shown in the following pie chart, approximately 50% of land use in the 21,729 acre watershed is residential, commercial, agriculture, industrial, or transportation. Increases in stormwater runoff, and waterbody nutrient loads can often be attributed to these types of land uses.

Background

Healthy, well-balanced stream communities may be maintained with some level of human activity, but excessive human disturbance may result in waterbody degradation. Human stressors may include increased inputs of nutrients, sediments, and/or other contaminants from watershed runoff, adverse hydrologic alterations, undesirable removal of habitat or riparian buffer vegetation, and introduction of exotic plants and animals. State



water quality standards are designed to protect designated uses of the waters of the state (*e.g.,* recreation, aquatic life, fish consumption), and exceedances of these standards are associated with interference of the designated use.

Methods

Surface water sampling was conducted to determine the health of Alford Arm Creek and met the collection and analysis requirements of the Florida Department of Environmental Protection (FDEP).

Results

According to FDEP requirements, Numeric Nutrient Criteria (NNC) (expressed as annual geometric mean) cannot be exceeded more than once in a three year period. Due to low water conditions, four temporally independent samples per year have never been collected from this station. Even though staff was not able to collect the required amount of samples, some conclusions can be made. Based on the geometric mean of the three samples taken in 2013, total phosphorus (0.12 mg/L), and total nitrogen levels (0.69 mg/L) demonstrate that nutrients were below the NNC thresholds.

Dissolved Oxygen

As Figure 1 shows, Alford Arm Creek seldom met the Class III criteria for dissolved oxygen (DO). This is not surprising since low gradient, low flow streams often have low DO levels.

Other Parameters

Other water quality parameters appear to be normal for the area and no other impairments were noted.

Conclusions

Based on ongoing sampling, Alford Arm nutrient levels in 2013 appear to meet the nutrient thresholds for the East Panhandle Region. However, the Class III criterion for DO was seldom met. This is not a surprising result in this low gradient, low flow stream.

Thank you for your interest in maintaining the water quality of Leon County's aquatic resources. Please feel free to contact us if you have any questions.

Contact and resources for more information

www.LeonCountyFL.gov/WaterResources

Click here to access the results for all water quality stations sampled in 2013.

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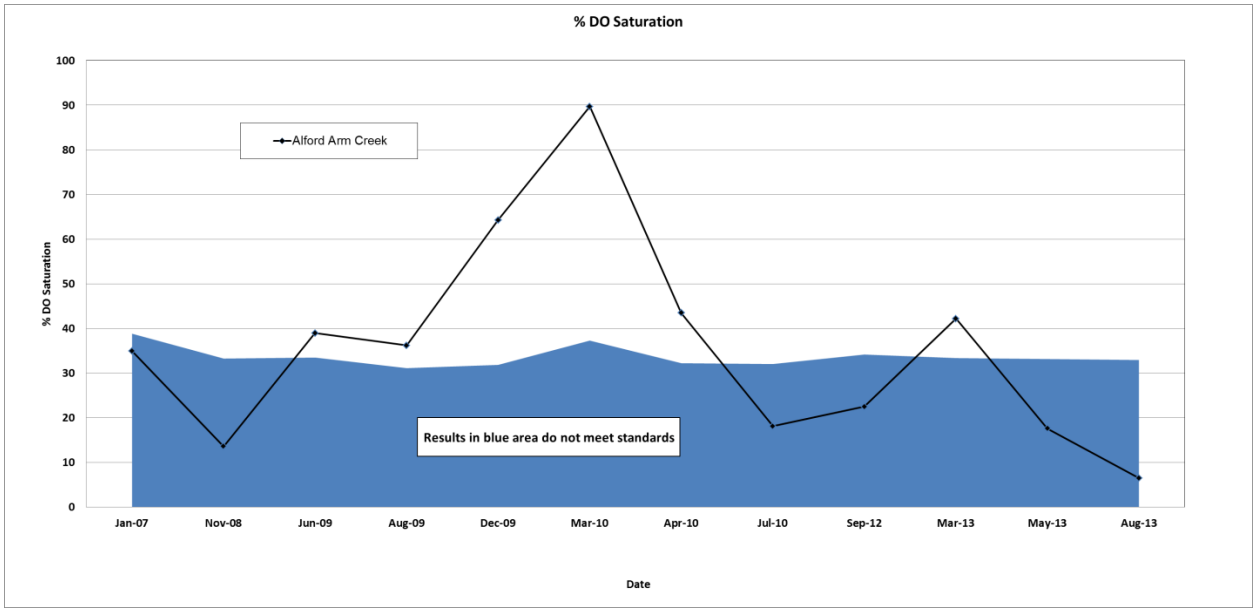

Figure 1. Dissolved Oxygen Percent Saturation results for Alford Arm Creek.